

What is claimed is:

1. A method for processing an image to be displayed as a single screen image, comprising the steps of:

determining whether or not a personal image is included in said image, based on image signals representing said image;

recognizing an oriented direction of said image, based on at least one of element-feature quantities with respect to constituent elements constituting said personal image, when determining that said personal image is included in said image in said determining step.

2. The method of claim 1,

wherein said constituent elements include a shape of face, a positional relationship between both eyes, a positional relationship between said face and hair on a head, and a positional relationship between said face and a hand or a leg.

3. The method of claim 1,

wherein, when determining that said personal image is included in said image in said determining step, said

oriented direction of said image is recognized, based on a background-feature quantity obtained by comparing a feature quantity, extracted from an image area included in said image, with another feature quantity, extracted from another image area included in said image in addition to at least one of said element-feature quantities.

4. The method of claim 3,

wherein, when recognizing said oriented direction of said image based on both said element-feature quantities and said background-feature quantity, a weighting for said element-feature quantities is heavier than that for said background-feature quantity.

5. The method of claim 3,

wherein said image area and said other image area are located at peripheral regions of said image.

6. The method of claim 1,

wherein, when not in said determining step, said oriented direction of said image is recognized, based on a background-feature quantity obtained by comparing a feature quantity, extracted from an image area included in said

image, with another feature quantity, extracted from another image area included in said image.

7. The method of claim 6,

wherein said background-feature quantity relates to one of an image symmetry using color information, an image symmetry using edge information, an inclination of brightness, and uniformity of a region close to each side of said image.

8. The method of claim 6,

wherein, when determining that said personal image is included in said image in said determining step, said oriented direction of said image is recognized, based on said background-feature quantity in addition to at least one of said element-feature quantities.

9. The method of claim 8,

wherein, when recognizing said oriented direction of said image based on both said element-feature quantities and said background-feature quantity, a weighting for said element-feature quantities is heavier than that for said background-feature quantity.

10. The method of claim 8,

wherein said image area and said other image area are located at peripheral regions of said image.

11. The method of claim 6, when said oriented direction of said image, recognized in said recognizing step, is other than an inclination of zero degree, further comprising the steps of:

converting said image signals representing said image to rotated image signals representing a rotated image, whose oriented direction coincides with said inclination of zero degree;

reducing a size of said rotated image signals so as to generate reduced-rotated image signals representing a reduced-rotated image;

storing both said rotated image signals and said reduced-rotated image signals into a storage medium.

12. The method of claim 1, when said oriented direction of said image, recognized in said recognizing step, is other than an inclination of zero degree, further comprising the steps of:

converting said image signals representing said image to rotated image signals representing a rotated image, whose oriented direction coincides with said inclination of zero degree;

reducing a size of said rotated image signals so as to generate reduced-rotated image signals representing a reduced-rotated image;

storing both said rotated image signals and said reduced-rotated image signals into a storage medium.

13. A method for processing an image to be displayed as a single screen image, said image being one of a plurality of images, which have partial images relating to each other among said plurality of images, comprising the steps of:

determining whether or not a personal image is included in said partial images, based on image signals representing said partial images;

acquiring element-feature quantities with respect to constituent elements constituting said personal image, when determining that said personal image is included in said partial images in said determining step;

acquiring background-feature quantities by comparing feature quantities extracted from image areas included in

said partial images with other feature quantities extracted from another image areas included in said partial images; and

recognizing an oriented direction of said image, based on at least one of said element-feature quantities and/or at least one of said background-feature quantities.

14. The method of claim 13,

wherein, when recognizing said oriented direction of said image, a weighting for said element-feature quantities and/or said background-feature quantities with respect to said image is heavier than that with respect to another image.

15. The method of claim 13, further comprising the step of:

reducing a size of said plurality of images prior to said steps of acquiring said element-feature quantities and said background-feature quantities to recognize said oriented direction of said image.

16. The method of claim 13, when said oriented direction of said image, recognized in said recognizing step, is other than an inclination of zero degree, further comprising the steps of:

converting image signals representing said image to rotated image signals representing a rotated image, whose oriented direction coincides with said inclination of zero degree;

reducing a size of said rotated image signals so as to generate reduced-rotated image signals representing a reduced-rotated image;

storing both said rotated image signals and said reduced-rotated image signals into a storage medium.

17. An apparatus for processing an image to be displayed as a single screen image, comprising:

a determining section to determine whether or not a personal image is included in said image, based on image signals representing said image;

a recognizing section to recognize an oriented direction of said image, based on at least one of element-feature quantities with respect to constituent elements constituting said personal image, when said determining section determines that said personal image is included in said image.

18. The apparatus of claim 17,

wherein, when said determining section determines that said personal image is not included in said image, said recognizing section recognizes said oriented direction of said image, based on a background-feature quantity obtained by comparing a feature quantity, extracted from an image area included in said image, with another feature quantity, extracted from another image area included in said image.

19. A computer program for executing operations for processing an image to be displayed as a single screen image, comprising the functional steps of:

determining whether or not a personal image is included in said image, based on image signals representing said image;

recognizing an oriented direction of said image, based on at least one of element-feature quantities with respect to constituent elements constituting said personal image, when determining that said personal image is included in said image in said determining step.

20. The computer program of claim 19,

wherein, when not in said determining step, said oriented direction of said image is recognized, based on a



background-feature quantity obtained by comparing a feature quantity, extracted from an image area included in said image, with another feature quantity, extracted from another image area included in said image.